breaks are prevented by the work of consultants in communicable disease control and environmental health officers. Both hepatitis A and typhoid are notifiable diseases. Notification sets in motion a series of events, which may include contact tracing, education, administration of immunoglobulin, and surveillance of contacts.[2] These "behind the scenes" measures for prevention and control may consume considerable resources, particularly if the index case is in someone who handles food. Although inclusion of the costs of prevention and control of these two diseases in the analyses may not have affected the authors' overall conclusion, the resource implications of the work of consultants in communicable disease control and their colleagues should have been incorporated.

In addition, the cost of administering the vaccines were based on a survey published in 1990 and reflect historical patterns of work. In recent years practice nurses have taken on an increasing range of tasks.[3] In many primary health care centres practice nurses rather than general practitioners probably administer vaccines to travellers. The costs of administration in Behrens and Roberts' table III should be recalculated with this in mind.

If analyses such as these are to be used for directing public health policy they should first ensure that all relevant costs and consequences are identified and measured and valued appropriately. Secondly, given the sensitivity of the cost-benefit ratios to changes in the incidence of disease, it would be helpful for those devising local policy if estimates could be provided for threshold incidences at which administration of these vaccines would be cost beneficial.

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Generalists as gatekeepers to secondary care

EDITOR,—Brendan Sweeney describes the advantages of the NHS's referral system, whereby patients have access to specialist care only through their generalist, their general practitioner.[1] These advantages are clear when one works (as I now do) in a country in which, by contrast, all patients have open access to specialist services.

But what of the disadvantages of the British system? Why does open access flourish on the continent and elsewhere? One factor is undoubtedly the power of the specialist lobby, anxious to retain direct access to patients for whom a fee per service is paid. Probably equally important is public opinion: patients in Belgium regard a choice of doctor (who, when, and where) as a right. Sweeney's editorial makes almost no mention of patients' views on the referral system. As British "patients" become "consumers" they, too, may become unhappy with a system in which their general practitioner exercises choice on their behalf—an issue that the patient's charter scarcely begins to address.

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Myths in medicine

Jenner did not discover vaccination

EDITOR,—Without wishing to take anything away from the contribution made by Edward Jenner's cow, Blossom, I fear that Norman Begg and Angus Nicoll score an own goal in their article on myths in immunisation.[1] To reiterate their own quotation: "falsehood flies and truth comes limping after."

The limping truth is that Edward Jenner was a political opportunist who obtained priority in the discovery of vaccination (1796) through his reputation (he was elected a fellow of the Royal Society in 1779 on the strength of his research on cuckoos) and aristocratic social standing (he received financial support from the Duke of Bedford and the lord mayor of London). The efficacy of vaccination was already known among local farmers in north Dorset in the mid-1770s. Benjamin Jesty, who had observed the protective effects of cowpox infection among his milkmaids, persuaded his wife (then aged 50) and two sons that they should be deliberately infected with cowpox material. He used a stocking needle to transfer matter from a cowpox pustule on a cow (not Blossom, I'm afraid) to a scratch made on the arm of each of the members of his family. These inoculations were the first recorded vaccinations.[2,3] His wife lived until she was 84 (over twice the life expectancy in the 18th century).

Jenner's experiments came 22 years later. Benjamin Jesty was presented with two lancets mounted in gold in 1805, together with a document attesting to his discovery of vaccination. In 1829 John Fosbroke wrote that if Jenner had not had "fortune, fame, and high alliance, his merit would have been crushed or faintly supported." Let us lay the Jenner myth to rest for the final time.

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Surveillance-containment is key to eradication of smallpox

Another myth about immunisation should be added to Norman Begg and Angus Nicoll's list, though it is perhaps now of only historical importance.[1] It is commonly said, particularly in the introductory sentences to the appropriate passage in undergraduate and non-specialist books, that smallpox was eradicated by mass immunisation. Undoubtedly immunisation played a part in reducing the incidence to manageable levels. The key to eradication, however, was the switch from mass immunisation, which was not very successful, to a dynamic campaign of surveillance-containment backed up by immunisation.[2]

The significance of the switch in policy is illustrated by the campaign in Sierra Leone. In 1967-8 Sierra Leone had the highest rate of smallpox in the world. The eradication campaign started there in January 1968, and the last case occurred in April 1969. Three of the four largest outbreaks were controlled without mass immunisation.[3] Similar success was achieved in other countries in west and central Africa.[2]

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Word of warning to junior ophthalmologists

EDITOR,—I recently spent several humbling and depressing hours trying to shortlist half a dozen applicants for a career registrar post in ophthalmology. There were 30 applications for the one post, which is only the 11th such post to be advertised in the *BMJ* during the first eight months of 1994.

Twenty four applicants had an FRCS or FRCOphth; four also had an MRCP; three had an MSc; one had an MD; one had an MRCGP; many were multiple prize winners; and most had multiple publications. Any one of the applicants would have had no problem in obtaining a registrar post 10 years ago. Today only half a dozen will be shortlisted, and probably only the top 10 will ever obtain a registrar post in the United Kingdom. What about the 20 others?

According to the Royal College of Ophthalmologists, in 1993 in the United Kingdom there were 416 senior house officers; 282 were of settled status, 229 were pursuing a career in ophthalmology, and 51 had an FRCS or FRCOphth.[1] At the same time there were 155 career registrars in the United Kingdom, 43 being in research posts.[2] Joint Planning Advisory Committee (JPAC) national targets for career registrars in 1993 in England and Wales were 107.[3] The number of high quality applications from senior house officers for a career registrar post is therefore not surprising. Is it not, therefore, a scandal that a large proportion of these highly able, intelligent, and qualified applicants stand little or no chance of continuing their ophthalmic career to consultant level?

Senior house officers do an enormous amount of work in the health service, largely in outpatient clinics (ophthalmologists see 19 outpatients for every inpatient[4]). Their numbers therefore cannot simply be reduced if the service requirement of the health service is to be met. To achieve any sort of career balance the numbers of senior house officers have to be cut but replaced with a different grade.

To achieve such a balance at least 100 so called settled career senior house officers must be lost. To fulfil the service requirements the work must be done, either by replacing them with more consultants and the appropriate extra registrars and senior registrars (Calman trainees) or by replacing them with more associate specialists, staff grade doctors, clinical assistants, or whatever alternative career grade can be devised.

Until this problem is adequately addressed, junior doctors contemplating a career in ophthalmology would be well advised to think carefully before embarking on such a course. An MRCP, an MSc, an MD, prizes, and publications seem to be essential requirements for all senior house officers aspiring to be career registrars. The fellowship that was necessary 30 years ago to become a consultant, 20 years ago to become a senior registrar, and 10 years ago to become a registrar is now reduced to a senior house officer qualification, which on its own seems to be almost useless if acceptance into higher specialty training is desired.

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